

In the Claims

Please cancel claims 7, 13, 22, 23 and 29 and substitute the following amended claims for the pending claims having the same number:

Claim 1. (Thrice Amended) A method for etching a semiconductor substrate using a germanium hard mask, the semiconductor substrate having a dielectric layer over a major surface thereof, the method comprising the steps of:

- a) depositing a layer of metallic germanium over the dielectric layer;
- b) patterning the layer of metallic germanium to form the germanium hard mask as a top most layer over the dielectric layer, the step further comprising:
  - i) depositing a photo resist layer over the layer of metallic germanium;
  - ii) exposing and developing the photo resist layer to form a photolithography image;
  - iii) etching the layer of metallic germanium through the photolithography image; and
  - iv) removing the photoresist layer prior to selectively etching the dielectric layer through the germanium hard mask;
- c) selectively etching the dielectric layer through the germanium hard mask with the germanium hard mask as a top most layer to form an opening in the dielectric layer; and
- d) selectively etching the semiconductor substrate through the opening in the dielectric layer.

Claim 9. (Thrice Amended) A method for fabricating a semiconductor device having a dielectric stack over a major surface thereof, comprising the steps of:

- a) depositing a metallic germanium layer over the dielectric stack;
- b) patterning the metallic germanium layer to form a germanium hard mask as a top most layer over the dielectric stack, the step further comprising:

- C2  
cancel
- i) depositing a photo resist layer over the metallic germanium layer;
  - ii) exposing and developing the photo resist layer to form a photolithography image;
  - iii) etching the metallic germanium layer through the photolithography image; and
  - iv) removing the photoresist layer prior to selectively etching the dielectric layer through the germanium hard mask
- c) etching the dielectric stack through the germanium hard mask with the germanium hard mask as a top most layer to form a dielectric hard mask over the major surface of the semiconductor substrate;
- d) etching the semiconductor substrate through the dielectric hard mask;
- e) forming doped regions in the semiconductor substrate; and
- f) forming dielectric and conductive structures over the semiconductor substrate.
- 

C3

Claim 15. (Twice Amended) A method for etching a semiconductor wafer, the semiconductor wafer having a dielectric stack over a major surface thereof, the method comprising the steps of:

- a) forming a germanium hard mask as a top most layer over the dielectric stack, the step comprising depositing a photo resist layer over the metallic germanium layer;
  - b) removing the photoresist layer prior to selectively etching the dielectric layer through the germanium hard mask;
  - c) etching the dielectric stack through the germanium hard mask to form a dielectric hard mask over the major surface of the semiconductor wafer; and
  - d) etching the semiconductor wafer through the dielectric hard mask.
-

Claim 24. (Amended) A method for etching a semiconductor substrate having a dielectric layer over a major surface thereof, the method comprising the steps of:

- a) depositing a layer of germanium over the dielectric layer;
- b) depositing a photoresist layer over the germanium layer;
- c) exposing and developing the photo resist layer to form a photolithography image;
- d) etching the metallic germanium layer through the photolithography image to form a germanium hard mask over the dielectric layer;
- e) removing the photoresist layer from over the germanium hard mask;
- f) patterning the dielectric layer through the germanium hard a mask after removing the photoresist layer from over the germanium hard mask to form a dielectric hard mask over the semiconductor substrate; and
- g) selectively etching the semiconductor substrate through the dielectric hard mask.

Claim 31. (Amended) A method for etching a semiconductor substrate having a dielectric layer over a major surface thereof, the method comprising the steps of:

- a) depositing a layer of germanium over the dielectric layer;
- b) patterning the layer of germanium to form a germanium hard mask, the step further comprising:
  - i) depositing a photo resist layer over the metallic germanium layer;
  - ii) exposing and developing the photo resist layer to form a photolithography image;
  - iii) etching the metallic germanium layer through the photolithography image; and
  - iv) removing the photoresist layer prior to selectively etching the dielectric layer through the germanium hard mask;;
- c) patterning the dielectric layer through the germanium hard mask using a process selective to germanium to form an opening in the dielectric layer; and